Proposed Supplemental Study

Connecticut River Basin

New England River
Basins Commission

Revised
September 2, 1971

E. SUPPLEMENTAL STUDY PROGRAM

The following pages will describe a study program for the Connecticut River Basin, to be carried out under leadership of the New England River Basins Commission under authority of the Water Resources Planning Act of 1965. The proposed study is a supplement to the Comprehensive Investigation of Water and Related Land Resources of the Connecticut River Basin completed in 1970 under authority of a Resolution of the Public Works Committee of the United States Senate dated May 11, 1962.

The proposed study will begin in Fiscal Year 1972 as quickly as study organization can be accomplished, and will be completed June 30, 1974. Total cost in new funding is estimated at $700,000, including $110,000 in FY 1972 funds which the U. S. House of Representatives, in its Public Works Appropriations bill for FY 1972, has appropriated for study under direction of the Water Resources Council of environmental impacts of the Basin plan.

Costs of overall study management and coordination will be borne by the New England River Basins Commission out of its operating budget.

Objectives. The study's primary objectives are:

1) to develop a body of information on environmental and ecological characteristics, processes and values which will be useful for future decision-making in the Basin generally, and will be applied specifically in re-examination of flood management alternatives;

2) to formulate a flood management program for the basin based on re-examination of need for additional flood

protection, and rigorous examination of the full range of environmental, economic, engineering and other factors.

The environmental reconnaissance (item 1) under "Objectives") will be published for distribution to public and private agencies as a contribution to knowledge of basin resources.

The recommended flood management program, with evaluation of alternatives and of environmental and economic impacts, will be transmitted formally to the Governors, and through the Water Resources Council to the President and the Congress, as an element of the Basin plan for the Connecticut. The recommended program will be designed to assist States, Federal and local governments and private interests to make informed decisions on flood management for the Basin. It is assumed that State and Federal agencies will develop and propose projects to implement the recommended plan.

Need for Study. Serious reservations have been expressed about various aspects of the Coordinating Committee report by individual citizens and citizen groups, local governments, political leaders and members of the scientific community. Prime areas of concern are 1) that environmental information and values were not adequately reflected in developing management recommendations for the Basin; 2) that the report's conclusions and recommendations on flood management, involving an extensive set of major physical works, were not supported by adequately detailed analyses of flood risk, alternatives, or environmental effects.

In the basence of a study clarifying these issues, there is little prospect of consensus on the need for or preferred methods of providing additional flood protection. Areas subject to flood hazard will remain so. Potentially effective and acceptable flood control programs will

remain unexplored in sufficient detail to permit informed judgment. In the event of serious flood conditions, solutions will be sought in a crisis atmosphere, quite possibly without opportunity for thoughtful consideration of environmental effects.

Scope. The study will produce an environmental reconnaissance of the basin, assessing environmental characteristics, values and processes, both in general terms and with special reference to areas and values most likely to be affected by flood management decisions. The study will re-assess the problem of flooding in the basin, with particular reference to major potential damage centers, and the need for additional protection. The study will consider alternative flood management methods, and will produce a recommended flood management program, taking into account both quantitative and qualitative economic and environmental benefits and costs, as these affect both specific project sites and the Basin as a whole.

Action recommendations will be presented on a level of specificity comparable to Study Element 10 of the Coordinating Committee report, "Flood Control and Multiple Purpose Reservoirs". Supporting analysis of alternatives will be presented in sufficient detail and in a format that will permit the exercise of independent judgment.

The study is organized into five tasks which are further broken down into appropriate subtasks. The five basic tasks are:

- -- environmental reconnaissance of the Basin;
- -- evaluation of the degree of additional flood protection needed;
- -- assessment of legal, institutional, and financial arrangements for flood protection and flood plain management;
- -- evaluation of flood management alternatives, with environmental and economic impact evaluations; and
- -- plan formulation.

The study will cost an estimated $700,000 and will require two and one-half years to complete.

Management and organization. The study will be performed under the overall management and coordination of the Commission, through staff employed by the Commission for its Connecticut River Basin Program, a continuing program to help achieve effective management of water and related land resources of the Basin through intergovernmental cooperation. Appropriate Federal and State agencies will participate in their areas of responsibility and expertise. In addition to study leadership, NERBC will participate in all study phases, through Commission staff and through private consultants. Beyond public meetings and hearings, direct public participation will be secured through a Citizen Advisory Board to the NERBC Connecticut River Basin Program. The scientific community will participate through a Science/Research Advisory Committee.

Each task will be executed by a study team led by an agency with appropriate responsibilities and expertise in the subject of investigation. Actual performance of work may be by agency personnel, or by other agencies or private consultants, or a combination. Each team will receive policy guidance from the Commission.

NERBC's participation in specific tasks will help secure specialized competence not readily available through participating agencies, as well as independent points of view.

All reports on individual tasks and subtasks are to be prepared for the Commission as inputs to a plan ultimately to be formulated by all member states and agencies of the Commission, with the participation of the Citizens Advisory Board and the Science/Research Advisory Committee.

Personnel for performance of the study will be provided by the Water Resources Council, by member States and agencies of the Commission, by Commission staff, by consultants, by the Citizens Advisory Board, and by the Science/Research Advisory Committee, under the overall management and coordination of the Commission.

Task 1. Environmental reconnaissance of the Basin

Schedule: 9 months - January 1, 1972 - September 30, 1972

Cost: $135,000

Description: A reconnaissance of environmental/ecological features of the Basin, with particular reference to aquatic ecosystems. Existing information will be assembled, and evaluated, and will be supplemented by field investigation. The reconnaissance will be directed at selected ecological characteristics, processes and values of the river system as a whole, with special consideration of specific river reaches and characteristics and processes most likely to be affected by alterations in river flows. Attention will be given to identifying major ecosystems, life zones, special habitats, food chains and other factors that should be considered in planning alterations in river flows. Concentration on critical factors and selected river reaches should generate information useful to analysis of flood management alternatives within limits of schedules and funding.

Information on scenic, scientific, archeological and historic sites and recreation areas assembled for the Coordinating Committee will also be summarized in this task. Emphasis, however, is clearly on ecological investigation.

Results will be used specifically to assist in evaluation of flood

management alternatives in Task 4, but will be published in a format that will also permit their use in the evaluation of other resource management projects. The development of a detailed ecological inventory and predictive model pertinent to all resource use decisions forthe entire Basin is not included within the scope of this task.

Study management and organization: Task 1 will utilize the equivalent of seven full time Federal agency and consulting personnel, with additional personnel from participating State agencies. The Department of the Interior will serve as lead agency, executed through the Regional Coordinator, Office of the Secretary, with policy guidance from the Commission. The Environmental Protection Agency will also have a major role. A study management team will be assembled from qualified professional staff from appropriate agencies of the Department and of EPA, with emphasis on competence in aquatic ecosystems. NERBC will participate on the study management team. The Citizens Advisory Board and the Science/Research Advisory Committee will participate. Illustrative areas of responsibility are as follows:

-- Organization of study results, preparation of report -- Department of the Interior

-- Fish, wildlife and aquatic ecosystems; special environmental factors, unique natural scenic, historical and archeological features; outdoor recreation resources -- Department of the Interior

-- Water quality and public health -- Environmental Protection Agency;

-- Special studies -- New England River Basins Commission

Task 2. Evaluation of need for additional flood protection

Schedule: 6 months - April 1, 1972 - September 30, 1972

Cost: $90,000

Description: An evaluation of the degree of additional flood protection needed, particularly at major urban and community damage centers. This task will include an examination of the Standard Project Flood as a decision-making tool in other river basins, with special attention to the Standard Project Flood for the Connecticut. An analysis will also be made of the degree and effectiveness of existing flood protection systems in the basin and of needs for additional protection in view of the extent and risk of potential loss of life and property and associated economic impairment. The analysis will be presented in sufficient detail and in a format that will permit the exercise of independent judgment. *

Study management and organization. Task 2 will utilize the equivalent of four full time professional positions, with additional personnel from participating State agencies. As outlined, the study management team will consist of personnel of the Water Resources Council, the U. S. Army Corps of Engineers, the Soil Conservation Service of the Department of Agriculture, appropriate Basin State agencies, and the Commission, with the Water Resources Council serving as lead agency. The Citizen Advisory Board and the Science/Research Advisory Committee will participate.

This task is central to the supplemental study program, and is difficult to organize in ways that will fully utilize the special knowledge and competence of agencies which have intensively studied flood management problems in the Basin, and will also be generally

*Funds allocated to this task include $10,000 in each of the fiscal years 1972 and 1973 to cover costs of the Corps of Engineers in providing detailed information for a special study of flood plain management on a reach of the river between Springfield and Northampton. The special study, not a part of the supplemental study program, is being carried out by a consultant to the Institute of Water Resources, Corps of Engineers, Washington, as part of a research program directed at developing a revised methodology for consideration of flood plain management alternatives. The study will, in effect, constitute a direct contribution to the Supplemental Study.

accepted by Basin interests as objective. The organization proposed assumes that professional staff of the Council can be made available for leadership of this task.

An alternative approach would be to arrange for the National Academy of Sciences to either conduct or formally review and comment on this task. The NAS report on alternatives for water management in the Colorado Basin is a useful precedent.

As presently outlined, areas of responsibility are:

-- Examination of the concept and use of the Standard Project Flood and the SPF in the Connecticut Basin -- Water Resources Council;

-- Analysis of the degree of flood damage protection afforded in the basin by natural storage, flood control structures, storage built for other purposes, flood plain regulation, flood proofing, flood warning and forecasting, etc. -- Water Resources Council, with Corps of Engineers, Soil Conservation Service, New England River Basins Commission;

-- Analysis of alternative levels of protection and risk as a basis for formulation of flood management program, organization of study results and preparation of report -- Water Resources Council, with New England River Basins Commission.

Task 3. Analysis of legal, institutional and financial arrangements for flood protection and flood plain management

Schedule: 9 months - April 1, 1972 - December 31, 1972

Cost: $50,000

Description: An assessment of the adequacy of existing mechanisms for the administration and financing of flood hazard area management and flood damage reduction in the Basin. The objective of this task is to provide bases for assessing the feasibility of

implementing alternative flood management programs identified in Task 4 and for recommending legal, institutional, and financial changes necessary to implement the recommended plan in Task 5.

It will consist of:

-- a broad examination of existing Federal, State and local laws, institutional arrangements and programs for flood protection and flood plain management, as these affect the range of effective choice of flood management in the Basin;

-- a more detailed assessment of existing and desirable State and local flood plain regulation authority and activities in the Basin (a Commission study Flood Hazard Area Management for New England* is relevant here);

-- a more detailed evaluation of Federal-State-local cost-sharing arrangements for both structural and nonstructural programs for flood protection and flood plain management in the Basin.

Study Management and organization: Task 3 will be performed by a consultant or consultants to the Commission, with the cooperation and assistance of agencies with relevant responsibilities and functions. The Citizen Advisory Board and the Science/Research Advisory Committee will participate.

*Prepared for the Commission by Anderson-Nichols & Company, Inc.

Task 4. Evaluation of flood management alternatives

Schedule: 15 months - October 1, 1972 - December 31, 1973

Cost: $375,000

Description: A simultaneous evaluation of structural and non-structural flood management alternatives designed to meet flood protection needs established in Task 2 will be undertaken from three perspectives:

a) from the standpoint of the minimization of flood losses, in which engineering and hydrologic factors will be a prime consideration;

b) from the standpoint of environmental factors, in which ecological, aesthetic and recreational values and land use patterns are a prime consideration;

c) from the standpoint of economic factors, in which economic impacts on communities and the region is a prime consideration.

Both quantitative and qualitative benefits and costs of alternatives will be evaluated. Results of Tasks 1, 2 and 3 are basic inputs to all evaluations. The special Corps-funded flood plain study in Massachusetts will be utilized. The Citizens Advisory Board and the Science/Research Advisory Committee will participate. Results will be utilized in the formulation of a flood management plan in Task 5, and will be presented in sufficient detail and in a format that will permit the exercise of informed judgment.

Alternatives will be evaluated for providing needed additional flood protection for major damage centers (including those with and without existing flood protection works), and for major flood prone land areas presently undeveloped or sparsely settled.

Because flood control and multiple purpose reservoirs and upstream watershed flood control projects were the subject of intensive analysis by the Coordinating Committee, this task will focus on alternatives which received less intensive study, in order to provide a uniform quality of analysis of the various alternatives.

Intensive analysis will be made in connection with major potential damage centers of:

-- local protection works, including the possibility of raising existing dikes and walls and constructing new works, and an assessment of the loss of natural Basin storage and concomitant increase in flood stages and damages that result downstream from building new dikes and walls in natural flood storage areas;

-- nonstructural measures, including flood plain regulation; acquisition in fee or less than fee of certain flood hazard areas; possible acquisition and removal of flood-threatened structures from the flood plain; flood forecasting/warning; flood insurance; and flood proofing;

-- potential use of existing storage and storage sites, especially private main stem power reservoirs whether or not subject to imminent relicensing, including the prospect of raising existing power dams or buying storage from power companies.

The task will also involve re-analysis of major flood control and multiple purpose (including flood control) reservoirs, and upstream watershed projects, considered in the Coordinating Committee report.

Alternative measures will, of course, be considered in combination as well as singly.

A first subtask will involve evaluation of alternatives from the standpoint of minimizing potential flood losses --to lives, property, to property values, to community tax bases and expansion opportunities, etc. Engineering and hydrologic criteria, benefit-cost evaluation, and certain intangible factors related to feelings of security and well-being will be central to this subtask.

A second subtask will evaluate environmental implications of alternative flood management measures singly and as a system, on project sites and on the Basin, as a basis for the selection of alternatives, with particular reference to the effects of alterations in river flow. Ecological factors taken into account will include indicator organisms, special habitats and ecologically sensitive areas. Scenic, historic and recreational values will be considered. This subtask will also consider affects of various alternatives on community and regional land use patterns. Limited funds for field investigations to supplement outputs of Task 1 will be available.

Evaluation of economic impacts --a third subtask-- will include the relative effect of alternative flood management measures on employment, personal income, private investment in new or expanding industrial development, and tax revenues. This analysis is to be distinguished from benefit-cost analyses to determine the dollar-value return on Federal investments in water resources projects.

Study management and organization: The evaluation of flood management alternatives will utilize the equivalent of 11 full time Federal agency and consulting personnel, with additional personnel from participating State agencies. Task 4 will require the perfomance of three separate subtasks concurrently by separate but interacting study management teams. Overall coordination and policy guidance will be provided by the Commission. Team composition and principal areas of responsibility are identified below.

Evaluation of alternatives from standpoint of minimizing flood losses.

This evaluation will cost approximately $170,000 and will utilize the equivalent of four full time Federal agency and consulting personnel, with additional personnel from participating

State agencies. The study management team will consist of personnel of the U. S. Army Corps of Engineers, the Soil Conservation Service of the Department of Agriculture, the Federal Power Commission, the National Weather Service of the Department of Commerce, appropriate Basin State agencies, and the New England River Basins Commission, as lead agency. Areas of responsibility are identified as follows:

-- Organization of study results and report preparation -- New England River Basins Commission;

-- Analysis of local flood protection works as an alternative to flood storage including the possibility of raising existing dikes and walls and of providing more extensive new local protection works than recommended in the Coordinating Committee report; organization of study results and report preparation -- Corps of Engineers;

-- Analysis of nonstructural alternatives, including flood plain regulation, acquisition, clearance, flood forecasting/ warning, insurance and flood proofing -- New England River Basins Commission and Corps of Engineers;

-- Analysis of the potential use of existing storage and storage sites -- Corps of Engineers and Federal Power Commission;

-- Reanalysis of flood control and multiple purpose Corps of Engineers and Public Law 566 upstream watershed reservoirs considered by the Coordinating Committee, in the light of findings of Task 2 concerning need for additional flood protection -- Corps of Engineers, Soil Conservation Service and National Weather Service.

Evaluation of alternatives from standpoint of environmental effects

The evaluation of environmental impacts of alternative flood control measures will cost approximately $170,000 and will utilize the equivalent of four full time Federal agency and consulting

personnel, with additional personnel from participating State agencies. The Department of the Interior will serve as lead agency, executed through the Regional Coordinator, Office of the Secretary, with policy guidance from the Commission. The study management team will consist of personnel from appropriate agencies of the Department, the Environmental Protection Agency, appropriate Basin state agencies, and the New England River Basins Commission. Assignments of responsibility derive from those for the environmental reconnaissance (Task 1) to insure continuity in environmental evaluations, i.e.:

-- Organization of study and preparation of report -- Department of the Interior, Office of the Regional Coordinator;

-- Analysis from standpoint of fish and wildlife and aquatic ecosystems, natural, scenic, historical and archeological features, and outdoor recreation resources -- Department of the Interior;

-- Analyses from standpoint of environmental pollution and public health -- Environmental Protection Agency;

-- Analyses from standpoint of community and regional land use patterns -- New England River Basins Commission.

Evaluation of economic impact.

The evaluation of economic impacts of alternative flood control measures will cost approximately $30,000 and will utilize the equivalent of one full time Federal agency member. The study management team will consist of personnel of the Office of Business Economics of the Department of Commerce and the Economic Research Service of the Department of Agriculture. The Office of Business Economics will serve as lead agency.

Task 5. Plan Formulation

Schedule: 6 months - January 1, 1974 - June 30, 1974

Cost: $50,000

Description: Formulation of a plan for structural and/or non-structural flood protection measures with special reference to major urban damage centers and major flood-prone areas not presently developed, with action recommendations at a level of specificity comparable to the Coordinating Committee's 1980 Early Action Plan for reservoir construction. The recommended plan will be based upon the results of the preceding four tasks, and will reflect the combined judgment of those participating in the study, including the Commission, its member States and agencies, consultants, the Citizens Advisory Board and the Science/Research Advisory Committee, concerning the need for additional flood protection in the Basin and the development of an optimum flood protection system through the most effective and appropriate legal, institutional and financial means.

The resulting report will represent the final product of the

supplemental study program, for which the reports of the preceding four tasks will serve as appendices. The report with appendices, after review and evaluation by the Commission, the Citizens Advisory Board and the Science/Research Advisory Committee, and formal review processes prescribed by the Water Resources Planning Act, will be transmitted to the Water Resources Council as a supplement to the 1980 Basin Plan approved by the Commission, and will serve as a flexible guide for future Basin flood management and as a supporting document for agency authorization reports. Follow-on recommendations for additional studies, review and evaluation, and program priorities will be developed as necessary by the Commission through the Connecticut River Basin Program.

Study management and organization: This task will cost approximately $50,000 and will utilize the equivalent of two full time Federal agency and/or consulting personnel. The New England River Basins Commission will perform this task with the assistance of the agencies contributing to the preceding tasks and of the Citizens Advisory Board and the Science/Research Advisory Committee. Report preparation will be the responsibility of the Commission staff.

Notes on public participation

Provision will be made for participation of the NERBC Connecticut River Basin Citizens Advisory Board (CAB) in the performance of each task. Members of the CAB will participate in study design; will receive interim progress reports and draft reports for review and comment; and will participate directly in plan formulation. Participating study agencies will be instructed to give explicit consideration

to comments of the Advisory Board in the preparation of task reports. The Board's comments on task reports, and on plan formulation, will be appended to the final report for transmittal to the Water Resources Council.

The Commission will prepare guidelines for use by lead agencies in securing participation of the Board in each task. Guidelines will be based in part on relevant recommendations of the Connecticut River Basin Citizens Review Committee. *

Board members and chairman will be appointed by the Chairman of the Commission after consultation with Basin State members of the Commission. Staff support will be provided by the Commission.

Notes on participation of the scientific community.

Provision will be made for participation in the supplemental study by members of the Basin scientific community representing relevant fields of science and research, with particular emphasis on the environmental sciences. This proposal is made in recognition of the clear need for more intensive involvement of the scientific community in natural resource planning programs generally, ** and in the Connecticut Basin specifically.

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* NERBC established a Citizens Review Committee (CRC) to advise the Commission on the Coordinating Committee Report. An interim Citizens Advisory Board was established upon the completion of CRC's assignment February 1, 1971, consisting of CRC members who volunteered to comment on the Commission's draft findings and recommendations on the Coordinating Report. The interim CAB was chaired by Professor Bernard B. Berger, who served as CRC moderator. One meeting was held to review the draft environmental impact statement prepared by the Coordinating Committee, and the Commission's draft report, July 23, 1971, at Amherst, Massachusetts. A statement prepared by the Chairman concerning the environmental impact statement was forwarded to the chair agency of the Coordinating Committee. The Commission's draft report was endorsed with suggested minor revisions.

** The Commission's plans of study for the SENE (Southeastern New England coastal resources) and Long Island Sound studies contain proposals for the organization of comparable science/research advisory groups.

The Science/Research Advisory Committee for the Connecticut River Basin supplemental study will have the following among its objectives:

-- to assist in the refinement of task descriptions;

-- to assist in the selection of consultants to investigate questions outside the capabilities or jurisdiction of participating agencies;

-- to review and comment on interim reports on all tasks;

-- to provide an independent, professional forum for the evaluation of study results; and

-- to identify, and, if possible, reconcile issues that may arise within the scientific community concerning study methodology and results.

The Chairman of the Commission will appoint the members and chairman of the Science/Research Advisory Committee, after consulting with Commission member States and agencies. Membership will be drawn from institutions of higher learning and other sources in each of the four Basin States. Staff support will be provided by the Commission.

The Commission will prepare guidelines for use by lead agencies for the participation of the Committee in each task, comparable to provisions for participation by the Citizens Advisory Board. The Commission will participate directly in plan formulation. The Committee will be encouraged to adopt operating procedures that are best suited to its needs, in cooperation with the Citizens Advisory Board and the study management teams. The Committee will also be encouraged to draw upon the experience of the Commission's SENE and Long Island Sound studies in developing procedures for participation of scientific communities in resources planning.

Coordinated Budget Estimates

Supplemental Connecticut River Basin Studies

September 2, 1971

Table 1. Funding by Task

Task	Agency	Total Estimated Cost	FY 1972	FY 1973	FY 1974
1.	Department of the Interior	85,000	35,000	50,000	
	Environmental Protection Agency	20,000	10,000	10,000	
	NERBC[2/]	30,000	15,000	15,000	
	Subtotal	135,000	60,000	75,000	
2.	Water Resources Council	25,000	10,000	15,000	
	Corps of Engineers	45,000	20,000[1/]	25,000[1/]	
	Soil Conservation Service	10,000	5,000	5,000	
	NERBC	10,000	5,000	5,000	
	Subtotal	90,000	40,000	50,000	
3.	NERBC[2/]				
	Subtotal	55,000	10,000	45,000	
4.	Subtask 1				
	Corps of Engineers	70,000		50,000	20,000
	Soil Conservation Service	40,000		30,000	10,000
	Federal Power Commission	10,000		5,000	5,000
	National Weather Service	20,000		15,000	5,000
	NERBC	30,000		20,000	10,000
	Subtotal	170,000		120,000	50,000
	Subtask 2				
	Department of the Interior	110,000		75,000	35,000
	Environmental Protection Agency	40,000		30,000	10,000
	NERBC	20,000		10,000	10,000
	Subtotal	170,000		115,000	55,000
	Subtask 3				
	Office of Business Economics	20,000		5,000	15,000
	Economic Research Service	10,000		5,000	5,000
	Subtotal	30,000		10,000	20,000
5.	NERBC[2/]				
	Subtotal	50,000[3/]			50,000[3/]
	Total Program	$700,000	$110,000	$415,000	$175,000

1/ includes $10,000 each year for logistical support of a demonstration flood-plain study to be carried out by a private consultant under contract to the New England Division, Corps of Engineers.

2/ for NERBC participation in specific tasks. NERBC costs as study leader borne by its operating budget.

3/ includes amounts for reimbursement to other agencies for participation in plan formulation not realistically allocable at this time.

Coordinated Budget Estimates

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Table 2. Agency funding (in thousands of dollars)

Agency	Method of Financing	Estimated Total Cost	Fiscal Year 1972	1973	1974
Water Resources Council	Direct	25	10	15	--
Department of Agriculture		60			
Soil Conservation Service	Transfer from WRC	50	5	35	10
Economic Research Service		10	--	5	5
Corps of Engineers	"	115	20	75	20
Department of Commerce		40			
National Weather Service	"	20	--	15	5
Office of Business Economics		20	--	5	15
Environmental Protection Agency	"	60	10	40	10
Federal Power Commission	"	10	--	5	5
Department of the Interior		195	35	125	35
New England River Basins Commission	"	195	30	95	70
TOTAL PROGRAM		700	110	415	175

Coordinated Budget Estimates

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Table 3. Funding by study functions (in thousands of dollars)

Function	Estimated Total Cost	Fiscal Year 1972	1973	1974
1. Management and Coordination	NERBC OPERATING BUDGET			
a. General management and coordination(meetings, travel, etc.)				
b. Scheduling and budgeting				
c. Public involvement				
2. Plan of Study	NERBC OPERATING BUDGET			
a. Identify and assess problems and needs				
b. Determine study objectives				
c. Develop plan of study including costs, personnel, sequence, etc.				
3. Field Work	350			
a. Further evaluation and delineation of problems, needs, goals	50	20	30	
b. Evaluate resource capabilities (without conditions)	300	90	210	
4. Plan Formulation	250			
a. Develop first cut of possible alternative plans and projects for all objectives. *	--	--	--	
b. Analyze alternative plan relationships(augmenting, conflicting, identifying trade-offs)	200	--	140	60
c. Review and select plan components for single or multiple objectives (may be necessary to revise Plan of Study and repeat 3 and 4 above)	50	--	--	50

* Completed by the Connecticut River Basin Coordinating Committee.